2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0138032
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACID BASE PROPERTIES OF NIO-SIL SUB2 CATALYSTS WERE STUDIED BY ADSORPTION OF ANTHRACENE FROM C SUB6 H SUB6 SOLNS., EVAPN. OF THE SOLVENT IN VACUO, AND RECORDING EPR SPECTRA OF THE RESIDUAL SPECIMEN. PURE SIO SUB2 AND SPECIMENS WITH DEPOSITED NI(OH) SUB2 DID NOT PRODUCE ANY EPR SIGNALS AFTER ADSORPTION OF ANTHRACENE ON THEM. HOWEVER AN INTENSE SIGNAL DEVELOPED ONLY AFTER ADSORPTION OF ANTHRACENE ON HEAT TREATED NIO-SIO SUB2 CATALYSTS IN WHICH THE NI PRIME2POSITIVE ION ENTERS THE SIO SUB2 LATTICE. THIS EVIDENTLY PRODUCES A STRONG ACIDIC CENTER WHICH IS ABLE TO ADSORB ANTHRACENE IN AN ION RADICAL FORM. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ALCOHOLYSIS DURING THE PREPARATION OF UNSYMMETRIC DIESTERS OF PHTHALIC ACID -U-

AUTHOR-(05)-KOMAROVA, R.P., ZVESOKINA, L.I., IGNATOVA, G.N., GRISHKO, N.I., LUKIEV, S.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1186-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHTHALATE, ALCOHOLYSIS, ESTERIFICATION, GAS CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1943 STEP NO--UR/0080/70/043/005/1186/1188

CIRC ACCESSION NO--AP0132204

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132204

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MONOAMYL PHTHALATE (I) OR MONONONYL PHTHALATE (II) WERE ESTERIFIED WITH NONYL ALC. OR AMYL ALC., RESP., IN THE PRESENCE OF 1.OPERCENT H SU82 SO SU84 (ON I OR II). GAS CHROMATOG. OF THE UNSYM. DIESTER SHOWED THAT AT THE OPTIMUM REACTION CONDITIONS BETTER YIELDS WERE OBTAINED WHEN II WAS USED AS A STARTING ESTER. I UNDERGOES ALCOHOLYSIS FASTER THAN II DECREASING THE FINAL YIELDS.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USE OF HYDROGEN TO REDUCE A FUSED IRON CATALYST -U-

AUTHOR-(05)-LOKTEV, S.M., MUKHLENOV, I.P., DAROVSKIKH, I.F., ZVEZOKINA, L.I., YAKOVLEVA, G.L.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(2), 108-12

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTIC REDUCTION, IRON, CATALYST, CATALYTIC ORGANIC SYNTHESIS, ALIPHATIC ALCOHOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0738 STEP NO--UR/0064/70/046/002/0108/0112

CIRC ACCESSION NO--AP0119645

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119645

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMUM CONDITIONS FOR THE REDN. OF THE FE OXIDE MIXT. (CONTG. FE 0.4, FEO 32.1, FE SUB2 O SUB3 64, STRUCTURE FORMING AGENTS 2.78, AND K SUB2 O 0.5 WT. PERCENT) BY H IN THE MANUFG. OF A COM. FE CATALYST (USED IN THE SYNTHESIS OF HIGHER ALIPHATIC ALCS.) ARE: 350DEGREES, 50 ATM, LINEAR VELOCITY OF THE H IS LARGER THAN 11 CM-SEC, TIME 20 HR; THE TIME CAN BE REDUCED TO 3 HR BY INCREASING THE TEMP. TO 450DEGREES, AT 20-40 ATM. ELECTROLYTIC H (99.5 VOL PERCENT H) IS USED FOR THE REDN.; THE PARTICLE SIZE BEFORE THE REDN. SHOULD BE 1-3 MM. THE REDUCED CATALYST CONTAINS 90-5PERCENT FE AND HAS A SP. SURFACE OF 14-16 M PRIME2-G; ITS SERVICE LIFE IN SYNTHESIS PROCESSES AT 170-80DEGREES IS LARGER THAN 1000 HR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--LIQUID PHASE SYNTHESIS OF ALCOHOLS FROM CARBON MONOXIDE AND HYDROGEN ON A MOLTEN IRON CATALYST -U-

AUTHOR-(04)-BASHKIROV, A.N., MOROZOV, L.A., LOKTEV, S.M., KAGAN, YU.B.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (4), 49-50

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, ALCOHOL, CARBON MONOXIDE, HYDROGEN, CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605019/B07 STEP NO--UR/0318/70/000/004/0049/0050

CIRC ACCESSION NO--AP0140901

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140901

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYNTHESIS CONDITIONS WERE SIMILAR TO THOSE OF THE GAS PHASE PROCESS, BUT HIGHER SPACE VELOCITIES WERE USED FOR REDUCING THE WATER CONCN. IN THE CATALYST ZONE. THE OPTIMUM CONDITIONS WERE AT 200 ATM, SPACE VELOCITY GREATER THAN OR EQUAL TO 10,000 HR PRIME NEGATIVE1, AND 160-62DEGREES. THE LIQ. PHASE PASSED THROUGH THE CATALYST IN A TUBULAR REACTOR, USING 1:10 CO-H, PROMOTED TYPICAL CATALYST, AND SYNTHINE, B. 270-300DEGREES WITH HIGH ALCS. AS LIQ. MEDIUM. THE REACTION PRODUCTS AND PART OF THE LIQ. PHASE WERE CARRIED AWAY BY THE GAS.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ANALYSIS OF THE RELIABILITY OF LOGIC CIRCUITS -U-

AUTHOR-(02)-LOKTIONOV, A.A., ZHETBAYEVA, M.P.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK KAZAKHSKOI SSR, IZVESTIIA, SERIIA FIZIKO-MATEMATICHESKAIA, VOL. 8, MAR. APR. 1970, P. 31-41
DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., METHODS AND EQUIPMENT

TOPIC TAGS--CIRCUIT RELIABILITY, LOGIC CIRCUIT, TRIGGER CIRCUIT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0251 STEP NO--UR/0361/70/008/000/0031/0041

CIRC ACCESSION NO--AP0124013
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124013

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE RELIABILITY OF LOGIC CIRCUITS WITH SERIES AND PARALLEL CONNECTED ELEMENTS DURING RANDOM MALFUNCTIONS. GENERALIZED FAILURE FORMULAS ARE OBTAINED FOR A TRIGGER WITH A COUNTING INPUT AND DIFFERENTIATING ELEMENTS AT THE OUTPUT, AND AN ESTIMATE IS MADE OF THE RELIABILITY OF THE SERIES CIRCUIT OF THE TRIGGER. THE RESULT IS COMPARED WITH AN ESTIMATE OF THE RELIABILITY OF THIS SAME CIRCUIT OBTAINED BY TAKING CATASTROPHIC FAILURES INTO ACCOUNT. A THREE INPUT MAJORITY CIRCUIT WITH RANDOM MALFUNCTIONS IS CONSIDERED, AND GENERALIZED FAILURE FORMULAS ARE OBTAINED FOR IT. AN ESTIMATE OF THE RELIABILITY OF A MAJORITY CITCUIT WITH RANDOM MALFUNCTIONS IS COMPARED WITH AN ESTIMATE OBTAINED WITH ALLOWANCE FOR CATASTROPHIC FAILURES. IT IS FOUND THAT IN THE CASE OF BOTH SERIES AND PARALLEL CONNECTED ELEMENTS SUBSTANTIALLY DIFFERENT RESULTS ARE OBTAINED DEPENDING ON WHETHER THE RELIABILITY IS CALCULATED WITH ALLOWANCE FOR RANDOM MALFUNCTIONS OR CATASTROPHIC FAILURES.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ONCE MORE ON INDUCTION OF CEREBRAL TUMORS IN RATS BY METHYLNITROSOUREA -U-

AUTHOR-(04)-DIMANT, I.N., LOKTIONOV, G.M., SATAYEV, M.M., ISRAILYAN, A.A.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 5, PP 90-92

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUMOR, RAT, BRAIN, HORMONE, X RAY RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0204 STEP NO--UR/0219/70/069/005/0090/0092

CIRC ACCESSION NO--AP0120902

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0120902
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE SETS FORTH THE RESULTANT DATA OF EXPERIMENTS ON MONGREL RATS INVOLVING THE INDUCTION OF CEREBRAL TUMORS BY INTRAVENOUS INJECTION OF METHYLNITROSOUREA. AN ANALYSIS OF THE RESULTS OF PERSONAL EXPERIMENTS WITH STATISTICAL TREATMENT SHOWED THE PRESENCE OF A SIGNIFICANT RELATION BETWEEN THE INCIDENCE OF OCCURRENCE OF CEREBRAL NEOPLASMS AND DISTURBANCES OF THE HORMONAL BALANCE CAUSED BY X IRRADIATION OF THE OVARIES AND FEEDING OF 6,METHYLTHIOURACYL. COMPARATIVE STATISTICAL STUDY OF LITERATURE SOURCES TESTIFY TO THE ROLE OF BIOLOGICAL PECULIARITIES OF THE LINES OF ANIMALS IN THIS PROCESS. FACILITY: INSTITUTE OF ROENTGENOLOGY, RADIOLOGY, AND ONCOLOGY, TASHKENT.

UNCLASSIFIED

USSR

UDC 537.312.62

KONOVODCHENKO, V. A., DMITRIYEV, V. M., KOMAREVSKIY, S. K., LOKTIONOV, N. F.

"Nonisothermal Superconducting Bolometer. II"

Tr. Fiz.-tekhn. in-t nizk. temperatur AN USSR (Works of the Physico-Technical Low Temperature Institute of the Ukrainian SSR Academy of Sciences), 1970, vyp. 9, pp 72-84 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract 4D463)

Translation: The concept of creating a nonisothermal superconducting bolometer arises directly from the statement of the problem of thermal conductivity for an ordinary (isothermal) superconducting bolometer considering nonuniformity of the temperature distribution along its sensitive element. However, along with the useful effect used, the understanding of the fact of simultaneous existence of sections with different superconducting states in the sensitive element of the superconducting bolometer implies significant complication of the problem which in this statement is very simple for ordinary bolometers. In some practical cases the sections of the sensitive element in the intermediate state make an insignificant contribution to its total electrical resistance, and analysis of the operation of the superconducting bolometer can be greatly simplified if only its superconducting and

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USSR

KONOVODCHENKO, V. A., et al., Tr. Fiz.-tekhn. in-t nizk. temperatur AN USSR, 1970, vyp. 9, pp 72-84

normal sections are considered. This problem was investigated earlier by the authors. This paper is devoted to solving the most general stationary problem of thermal conductivity of nonisothermal superconducting bolometers and development of a method of graphoanalytical investigation of its characteristics. A system of equations for determining the current coordinates of the boundaries of the sections of the superconducting bolometer with different states of the superconductor was obtained as a result of solving this problem. A number of special cases of solving the system are investigated, which along with having independent value, also turn out to be very useful when writing and developing the program for its complete solution. There are 2 illustrations and a 4-entry bibliography.

2/2

USSR UDC 669.14.018.29-414

GOL'DSHTEYN, M. I., BLYUM, E. E., GRIN', A. V., SELETKOV, A. I., LITVINENKO, D. A., LEYKIN, I. M., RUDCHENKO, A. V., OREL, E. I., VAYNTRAUB, S. S., LOKTIONOV, P. Ya., LASHCHEV, V. Ya., MOSIOSHVILI, V. F., MIROSHNICHENKO, S. I., and KONDRASHOV, M. M., Ural Scientific Research Institute of Ferrous Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin, and Kommunarsk Metallurgical Plant

"Adoption of the Industrial Production of 15G2AF Sheet Steel"

Moscow, Stal', No 9, Sep 70, pp 828-830

Abstract: An investigation of the 15G2AF plate steel (10-25 mm), commercially produced at the Kommunarsk Metallurgical Plant, revealed that alloying of the manganous structural steel with nitrogen and vanadium increases the strength and plasticity properties of the normalized rolled steel. Normalizing of the metal effects a size reduction of the grain (to 10-12), which assures a low (-100°C to -120°C) cold brittleness threshold. The strength of the 15G2AF steel was found to be at least 60 kg/mm^2 and the yield stress at least 45 kg/mm^2. Use of 15G2AF steel for welded structures decreased weight, in comparison with steel 10G2S1, by 13.6%.

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1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--SOLUBILITY OF OXYGEN IN NIOBIUM AND ZIRCONIUM ALLOYS -U-

AUTHOR-(02)-SHURIN, A.K., LOKTIONOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (1), 231-3

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SOLUBILITY, OXYGEN, NIOBIUM ALLOY, ZIRCONIUM ALLOY, HARDNESS, CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/1276 STEP NO--UR/0370/70/000/001/0231/0233

CIRC ACCESSION NO--AP0049438

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0049438

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALLOYS WERE ANNEALED IN NB CONTAINERS IN A VACUUM FURNACE AT 1600DEGREES FOR 100 HR AND THEN AT 1000DEGREES FOR 100 HR. THE O CONTENT IN THE SAMPLES VARIED FROM 0.025 TO 20 ATOM PERCENT. THE N CONTENT WAS LESS THAN 0.003 WT. PERCENT, THE H CONTENT WAS 10-15CM PRIME3-100 G, AND THE ZR CONTENT VARIED FROM 0.4 TO 33 ATOM PERCENT. THE SOLY. OF O IN PURE NB ATTAINS 5 ATOM PERCENT AT 1000DEGREES. AFTER SMALL ZR ADDNS. THE SOLY. DROPS SHARPLY. WITH 0.4 ATOM PERCENT ZR, THE O SOLY. IS LESS THAN 0.025 ATOM PERCENT AND THIS VALUE DOES NOT CHANGE WITH INCREASE IN ZR CONTENT TO 5.7 ATOM PERCENT. AT 1600DEGREES, THE SOLY. OF O IN NB IS SOMEWHAT HIGHER BUT THE EFFECT OF THE ZR ADDN. IS THE SAME. THE ZRO SUB2 CRYSTALS ARE GRAY BLUE AND ARE FOUND WITHIN THE GRAINS AND AT THE GRAIN BOUNDARIES. IN ALLOYS WITH A COMPN. IN THE 2 PHASE REGION IN THE NB RICH PORTION OF THE NB ZRO SUB2 SYSTEM, A EUTECTIC STRUCTURE IS OBSD. THE CHANGE IN THE SOLY. OF O IN THE ALLOYS STUDIED MAKES IT POSSIBLE TO EXPLAIN THE CHANGE IN HARDNESS OF NB WHEN IT IS DEOXIDIZED WITH ZR.

UNCLASSIFIED

USSR

UDC 533.92:621.039.61

LOKTIONOV, Yu. M., and SEBKO, V. P.

"Combined Helical Magnetic Systems for Plasma Confinement"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No 3, pp 125-137 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G278)

Translation: Certain forms of asymmetrical stellarator windings and windings of the torsatron type in combination with a central conducting rod are proposed to establish conditions for the simultaneous existence of sheer and minimum B, important stabilizing factors determining to a considerable degree the confinement time of a high-temperature plasma. It is shown that in rectilinear systems of this type values of a sheer of 0.05-0.28 are possible and the relative depth of the magnetic well is 3-7%. The effect of low toroidicity on the change in these quantities is slight.

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USSR

UDC 533.92:621.039.61

ALEKSIN, V. F., ROMANOV, S. S., SEBKO, V. P., and LOKTIONOV, Yu. M.

"Magnetic Configurations With Sheer and Minimum $\overline{B}$"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No 3, pp 113-125 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G277)

Translation: Magnetic configurations of one-, two- and three-slope helical fields (n = 1, 2, 3) with an axial current were investigated. Particular attention was given to the properties of rotational conversion of magnetic lines of force and to the minimum average magnetic field. The relationship between the magnetic well and sheer and the characteristics of the structure of each configuration was established. Numerical values are given for the sheer for each magnetic system (n = 1, 2, 3).

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USSR UDC 669.715'3'782'73'721'781.018.28:669.018.2(088.8)

STROGANOV, G. B., AL'TMAN, M. B., POSTNIKOV, N. S., KHOLODOV, Yu. I., OSIPOV, I. N., LOKTIONOVA, L. I., and CHERKASOV, V. V.

"High-Strength Aluminum-Base Casting Alloy"

USSR Authors' Certificate No 260893, Cl. 40 b, 21/02, (C22c), filed 10 Apr 68, published 12 May 70 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1766 P)

Translation: The alloy contains (in %) Si 6-8, Cu 2.5-5.5, Cd 0.05-0.4, Mg 0.05-0.4, B 0.002-0.1, Zr 0.005-0.25, Ti 0.1-0.3, Fe $\leq$ 0.5. The addition of up to 0.5% Ni is recommended in order to raise heat resistance. In the heat-treated state under regime T5 the alloy at room temperature (loam casting) has a breaking point of 36-40 kg/mm^2, $\sigma_{0.2}$ 30-34 kg/mm^2, and σ 3-6% given σ_{100}^{300} = 5.5 kg/mm^2. The alloy possesses elevated fluidity and impermeability, is highly machinable, is weldable by argon arc welding, and contains no toxic elements. It is recommended for the manufacture of cast parts subject to great stresses.

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1/2 028 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--SOME VARIANTS OF NORMAL AND PATHOLOGICAL FETAL ELECTROENCEPHALOGRAMS -U-

AUTHOR-(03)-CHACHAVA, K.V., DEVDARIANI, M.G., LOLADZE, A.S.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 2, 1970 PP 62-66

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EMBRYOLOGY, ELECTROENCEPHALOGRAPHY, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0732 STEP NO--UR/0248/70/025/002/0062/0066

CIRC ACCESSION NO--AP0102700

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0102700

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 1. BY APPLYING ELECTRODES DIRECTLY ON THE HEAD OF THE FETUS AND IMMOBILIZING THEM IT IS POSSIBLE TO RECORD THE ACTION CURRENTS OF THE FETAL BRAIN DURING LABOR. THE RECORDING OBTAINED FURNISHES SUFFICIENT INFORMATION ABOUT THE FUNCTIONAL STATE OF THE FETAL CENTRAL NERVOUS SYSTEM. 2. THE FETAL EEG IS VERY DIFFERENT WITH PHYSIOLOGICAL LABOR FROM THE EEG DURING COMPLICATED LABOR, AND IT IS CHARACTERIZED BY LOW VOLTAGE AND ABSENCE OF PATHOLOGICAL OUTPUT. 3. IN THE CASE OF COMPLICATED DELIVERY, THE AMPLITUDE OF PATHOLOGICAL ACTIVITY IS HIGHER THAN NORMAL. THE PATHOLOGICAL ACTIVITY MAY BE CONSTANT OR PERIODIC. THE DURATION OF PAROXYSMS AND FREQUENCY MAY BE INDICATIVE OF THE SEVERITY OF THE FETAL STATE.

UNCLASSIFIED

LOLADZE, Sh. A.

JPRS 59763
22 Aug 73
3

STRUCTURE AND PROPERTIES OF VERY PURE BORON CARBIDE

[Paper by I. A. Bayramashvili, G. N. Bakhiya, Sh. A. Loladze and Z. M. Mikadze; Dimitrovgrad, Pogloshchayushch[illegible] sterzhni regulirovaniya bystrykh reaktorov (Absorbing materials and control rods for fast reactors), Russian, International Working Group for Fast Reactors Specialists Meeting, Dimitrovgrad, 4-8 June, 1973]

In this paper the results of an investigation of the properties of boron carbide obtained by magnesium-thermal reduction are presented. In this work it is demonstrated that the material is very pure with respect to chemical composition, the powder is characterized by a rounded shape of the particles; the compacted products have satisfactory thermophysical properties. The results of an investigation of the physico-chemical properties of the material (dispersivity, density, specific surface, microhardness, mechanical properties for compression and wettability) are presented.

In distinction from other methods of the preparation of boron carbide powder, the magnesium-thermal method makes it possible to obtain very pure material of more accurate stoichiometric composition [1].

In this work, the basic characteristics of boron carbide powder obtain by means of magnesium-thermal reduction are considered, and the results of an investigation of certain properties of monolithic highly pure boron carbide are considered.

The boron carbide powder is distinguished for its high degree of purity. The chemical composition is given in Table 1.

USSR

UDC 535.211

BETANELI, A. I., DANILENKO, L. P., LOLADZE, T. N., SEMILETOVA, YE. F., ZHIRYAKOV, B. M., and FANNIBO, A. K., Tbilisi, Moscow

"Study of the Possibility of Additional Alloying of R18 Steel Using a Laser"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 6, Nov-Dec 72, pp 22-26

Abstract: A description is given of experimental results on the introduction of a number of alloying elements (carbon, VK3, VK6, T15K6 mixtures -- standard raw materials for producing solid solutions) into local sections of the surface of R18 high-speed steel with the aid of the quasi-static radiation of a ruby laser. The changes in microstructure and mechanical properties were investigated. Graphs showing the changes in microhardness with depth in the alloyed section according to depth are presented. From X-ray diffraction analyses it was established that the change in lattice parameters in the matrix material occurs as a result of the effect of the alloying elements and the dissolution of carbides in them. The selection of a quasi-continuous mode for local surface alloying proved to be most advantageous because this mode makes it possible to easily control mode parameters and thereby prevent metal failure which would result in the formation of a crater from the laser beam. Three figures, 2 tables, 6 bibliographic references.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--AUTOMATIC CONTROL AND REGULATION OF THE CONCENTRATION OF SULFURIC ACID AND ZINC SULFATE IN PRECIPITATING AND PLASTICIZING BATHS -U-

AUTHOR-(03)-MITROFANOV, YU.A., LOLENKO, I.Z., KONOVALOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (3), 53-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AUTOMATIC CHEMICAL PROCESS CONTROL, SULFURIC ACID, RAYON, ZINC COMPOUND, SULFATE, ELECTRIC CONDUCTIVITY, TEXTILE ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/C09 STEP NO--UR/0183/70/000/003/0053/0054

CIRC ACCESSION NO--AP0140275

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140275

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC. COND. OF THE COAGULATING AND PLASTICIZING BATHS, USED IN THE MANUF. OF RAYON FIBERS, DEPENDS PREDOMINANTLY ON THE CONCN. OF H SUB2 SO SUB4; THE CHANGES OF ZNSO SUB4 AND NA SUB2 SO SUB4 CONCNS. HAVE NEGLIGIBLE EFFECTS. AN AUTOMATIC RECORDING CONTROLLING DEVICE IS DESCRIBED WHICH CONTINUALLY DETS. THE COND., H SUB2 SO SUB4 CONCN., AND ADJUSTS ITS FEED IN THE 0-50 G PER L. RANGE WITH PLUS OR MINUS 1.2 G PER L. ACCURACY. THE CONCN. OF ZNSO SUB4 IS DETD. PERIODICALLY BY COLORIMETRY WITH TRILON B, CHROME DARK BLUE DYE, AND A BUFFER MIXT. FACILITY: BALAKOVSKII KOMB., USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DETERMINATION OF SULFURIC ACID CONCENTRATION -U-

AUTHOR-(04)-KONOVALOV, V.A., LOLENKO, I.Z., MITROFANOV, YU.A., KHLYNIN, V.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,544

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, SULFURIC ACID, ELECTRICAL CONDUCTIVITY, MEASUREMENT, IONIZATION CONSTANT, AQUEOUS SOLUTION, SULFATE, SODIUM COMPOUND, ZINC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0834 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131427

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0131427

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. H SUB2 SO SUB4 CONCN. IS DETD. IN A TERNARY SOLN. BY MEASURING THE ELEC. COND. OF THE SOLN. TO REMOVE THE EFFECT ON THE MEASUREMENT OF 7-10PERCENT ZNSO SUB4 AND NA SUB2 SO SUB4 CONTAINED IN H SUB2 SO SUB4, THE ELEC. COND. FOR A SOLN. DILD. IN A 1:(1-1.2) RATIO. FACILITY: RYAZAN RADIOTECHNICAL INSTITUTE.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THIN LAYER CHROMATOGRAPHY OF FURAN NITRATION PRODUCTS -U-

AUTHOR-(03)-VENTERS, K., APSITE, M., LOLYA, D.O.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (2), 10-17

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THIN LAYER CHROMATOGRAPHY, FURAN, NITRATION, UV SPECTRUM, IR SPECTRUM, ORGANIC NITRO COMPOUND, HYDRAZONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1672 STEP NO--UR/0197/70/000/002/0010/0017

CIRC ACCESSION NO--AP0125293

UNCLASSIFIED

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820010-5"

2/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125293
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ET SUB2 O SOLN. OF THE NITRATION PRODUCTS OF FURAN WAS ANALYZED BY THIN LAYER CHROMATOG. ON SILICA GEL WITH C SUB6 H SUB6 AS SOLVENT. BY UV AND IR SPECTROSCOPY THE FOLLOWING PRODUCTS WERE IDENTIFIED IN THE 4 BANDS THAT WERE OBTAINED: 2-NITROFURAN, 5,5 PRIME,DINITRO,2,2 PRIME,BIFURAN, 5,NITRO,2,ACETOXY,2,5,DIHYDROFURAN, AND A 2,4,DINITROPHENYLHYDRAZONE (I) CORRESPONDING TO THE BIS(2,4,DINITROPHENYLHYDRAZONE) OF MALEALDEHYDE (OR FUMARALDEHYDE) (II). II WAS SYNTHESIZED BY ADDING 0.20 G 2,5,DIMETHOXY,2,5,DIHYDROFURAN IN 3 ML ETOH, TO 200 ML, 0.3PERCENT I SOLN. IN 2N HCL; YIELD 54.5PERCENT, M. 306-7DEGREES (DECOMPN.). SIMILARLY 0.38 G 2,ETHOXY,5(2H),FURANONE GAVE 97.6PERCENT 2,4,DINITROPHENYLHYDRAZONE OF MALEALDEHYDIC (OR FUMARALDEHYDIC) ACID, M. 247DEGREES (DECOMPN.), AND 0.20 G DIHYDRO,2,ETHOXY,5(2H),FURANON GAVE 90.6PERCENT 2,4,DINITROPHENYLHYDRAZONE OF SUCCINALDEHYDIC ACID, M. 203DEGREES (DECOMPN.). FACILITY: INST. ORG. SIN., RIGA, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820010-5"

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INFRARED SPECTRA OF SOME FURAN AND 2,5,DIHYDROFURAN DERIVATIVES -U-

AUTHOR-(04)-EYDUS, YA., LOLYA, D.D., VENTERS, K., GRINVALDE, A.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (2), 18-25

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, FURAN, ABSORPTION BAND SPECTRUM, ORGANIC NITRO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1869 STEP NO--UR/0197/70/000/002/0013/0025

CIRC ACCESSION NO--AP0123657

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123657

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. THE IR SPECTRA OF 2,5,SUBSTITUTED FURANS (I) AND DIHYDROFURAN (II) WERE DETD. I: X, R EQUALS NO SUB2, H; NO SUB2, ME; NO SUB2, COAC; NO SUB2, CH(OAC)SUB2; H, COAC; H, CH(OAC); AND NO SUB2, 2,NITRO,5,FURYL; II: X, R EQUALS NO SUB2, H; NO SUB2, COAC; NO SUB2, CH(OAC) SUB2; AND OAC, H. ALL THESE SPECTRA POSSESS CHARACTERISTIC ABSORPTION AT 1381-1405, 1485-1525, 1571-1605, AND 1421-1034 CM PRIME NEGATIVE1. THE LAST BAND IS ATTRIBUTED TO COC. IN II THIS BAND IS DISPLACED TO 1019-1033 CM PRIME NEGATIVE1. ABSORPTIONS AT 1231 AND 1229, IN II, ARE DUE TO UPSILON SUBAS OF C:O, NOT TO UPSILON SUBAS OF COC. UPSILON SUBS AND UPSILON SUBAS OF NO SUB2, IN I, ARE AT 1340-1360 AND AT 1505-1535 CM PRIME NEGATIVE1. THOSE OF II AT 1380-1382 AND AT 1580-1582 CM PRIME NEGATIVE1, RESP. ABSORPTION OF NO SUB2, AT II, 1380-1382, INTERFERE WITH DELTA SUBS H-C, OF OAC. NO SUB2 IN I DOES NOT CAUSE ANY DISPLACEMENT OF THE BANDS OF CO SUB2 ME, BUT CAUSES DISPLACEMENTS IN II. THE OAC GROUP IS LESS SENSITIVE. ABSORPTION OF ME IS NOT EFFECTED BY NO SUB2, IN BOTH CASES, AND NO RELATION COULD BE ESTABLISHED CONCERNING THE INTERFERENCE OF THE FREQUENCIES OF THESE GROUPS. COC HAS LITTLE INFLUENCE ON THE DELOCALIZATION OF ELECTRONS. THESE PHENOMENA ARE MAINLY DUE TO THE EFFECT OF CONJUGATION.

FACILITY: LATV. GOS. UNIV. IM. STUCKI, RIGA, USSR.

UNCLASSIFIED

USSR

UDC 511

LOMADZE, G. A.

"Formulas for the Quantity of Number Representations by All Primitive, Positive Ternary, Diagonal Quadratic Forms Belonging to Single-Class Kinds"

Tr. Tbilis. mat. in-ta. AN GruzSSR (Works of Tbilisi Mathematics Institute, Academy of Sciences Georgian SSR), 1971, 40, pp 140-179 (summary in Georgian) (from RZh-Matematika, No 2, Feb 72, Abstract No 2A179 by A. MALYSHEV)

Translation: It is known (Jones, B. W., and Pall, G., Acta math., 1938, 70, pp 165-191) that there are only 82 classes of forms of the type $a_1x_1^2+a_2x_2^2+a_3x_3^2$, where $a_1>0$, $a_2>0$, $a_3>0$ are coprime integers which coincide with their kind. By calculating a singular series, the author obtains formulas for the quantity of number representations by these formulas.

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172 063 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--POSSIBILITIES OF A SHOCK TUBE IN OBTAINING AND STUDYING A DENSE LOW TEMPERATURE PLASMA -U-
AUTHOR-(03)-LOMAKIN, B.N., FORTOV, V.E., SHCHEKOTOV, O.E.

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZIKA VYSOKIKH TEMPERATUR, VOL. 8, JAN.-FEB. 1970, P.154-158

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DENSE PLASMA, LOW TEMPERATURE PLASMA, SHOCK TUBE, CESIUM, SHOCK WAVE PROPAGATION, THERMODYNAMIC ANALYSIS, COMPUTER CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0381 STEP NO--UR/0294/70/008/000/0154/0158

CIRC ACCESSION NO--AP0111574

UNCLASSIFIED

2/2 063 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0111574

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL ANALYSIS OF THE POSSIBILITY OF OBTAINING A DENSE LOW TEMPERATURE CESIUM PLASMA IN A SHOCK TUBE WITH HEATING. THE PROPAGATION OF A DIRECT AND REVERSE SHOCK WAVE IN CESIUM VAPOR IS CALCULATED, TAKING INTO ACCOUNT THE PLASMA NONIDEALITY BY APPLYING THE DEBYE THEORY IN A LARGE CANONIC ENSEMBLE. A SYSTEM OF EQUATIONS DESCRIBING THE CONSERVATION OF MASS, MOMENTUM AND ENERGY AT THE SHOCK WAVE IS INTEGRATED WITH THERMODYNAMIC EQUATIONS ON A COMPUTER. OPTIMAL EXPERIMENTAL CONDITIONS FOR OBTAINING SUCH PLASMAS ARE OBTAINED AS A RESULT.

UNCLASSIFIED

USSR

UDC 621.391

LOMAKIN, D. V.

"Efficiency of Detection Systems with Arbitrary Noise Distribution"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy—Radioelektronika, Vol XIV, No 8, 1971, pp861-867

Abstract: The asymptotic relative efficiency of three detection systems was determined: an optimal filter, an "optimal filter-limiter" and a polarity coincidence correlator with arbitrary noise distribution. An example calculation of the asymptotic relative efficiency is presented for the case of a mixture of gaussian noise and a sinusoidal signal. Use of the asymptotic relative efficiency coefficient [Fraser, Nonparametric Methods in Statistics, J. Wiley, New York, 270, 1957; Capon, IRE International Conv. Rec., Vol 8, No 4, 154, 1960] provides the possibility of mutual comparison of the indicated system with respect to detection quality with an unlimited increase in signal observation time (sample size). In the investigated example the gain in the threshold signal of the "optimal filter-limiter" system with respect to the optimal filter is about 1 decibel. The application of a polarity coincidence correlator leads to a gain of 3 decibels by comparison with an optimal filter and 1 decibel by comparison with the "optimal filter-limiter" system.

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USSR

UDC: 621.391

LOMAKIN, D. V.

"Optimal Detection of a Signal in Nongaussian Noise After Preliminary Amplitude Limiting"

Kiev, Izvestiya VUZ SSSR--Radioelektronika, No 10, 1972, pp 1286-1287

Abstract: The system of "ideal limiter-optimal filter" is usually employed for detecting a signal in a background of normal noise of unknown power for the purpose of stabilizing the false-alarm probability. The author of this brief communication, however, does not recommend use of this system for detecting a signal s(t) in noise n(t) with an arbitrary known distribution function F(n), where the process z(t) at the output of the limiter required to guarantee the maximum probability of correct detection for a given false-alarm probability is unknown. Formulas are given as guides for analyzing the treatment of z(t), and the functional diagram of the circuit for computing these formulas is given. It is concluded that the value of the noise probability distribution density for the term F'(0) of the Maclaurin expansion of F(n) determines the efficiency of weak signal detection using the limiter-filter system.
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USSR

UDC 621.385.623

KORNILOV, S.A., LOMAKIN, G.V., LOSEV, V.L., NOVOSELETS, V.I.

"Investigation Of Fluctuations In Mixer Klystrons"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 6, pp 40-50 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A150)

Translation: Theoretical and experimental investigations of fluctuations in mixer klystrons caused by the noise of an electron beam show that with a small modulation index of the beam ($m \approx 0.1$) it is possible by a reasonable tuning of the resonant cavities (the first two resonant cavities are tuned to the frequency of the input signal and the remainder to the frequency of the biased signal) to reduce the level of the phase fluctuations in equal parts of the spectrum by approximately 10 db. Summary.

1/1

USSR UDC: 62-501.4

PUPKOV, K. A., LOMAKIN, I. V., ZOTOV, M. G., Moscow Higher Technical School Imeni N. E. Bauman

"Synthesis of Nonlinear Systems Under Random Affects Based on an Equivalent Transfer Function"

Leningrad, Priborostroyeniye, Vol 13, No 6, 1970, pp 27-33

Abstract: The method of equivalent transfer functions is a development of the statistical linearization technique, permitting the output spectrum of the equivalent linear model to be the same as that of the nonlinearity it replaces without placing limitations on the transmission band width of the linear system portion. The equivalent transfer function derived by Pupkov (1965) from the relationships of output and input spectra of the nonlinear element is a steady state linear model of the nonlinear element, capable in principle of yielding an exact solution to the problem of analyzing and synthesizing steady state nonlinear systems within the framework of correlation theory.

Starting from a generalized expression for the equivalent transfer function, the basic problem in synthesizing nonlinear systems consists of finding the optimum parameters for given equivalent circuits in terms of a given criterion

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820010-5"

USSR

PUPKOV, K. A., et al, Priborostroyeniye, Vol 13, No 6, 1970, pp 27-33

of optimality. The optimum correcting unit will be uniquely determined by the chosen equivalent circuit structure and its parameters and by the ordinary relationships between statistical system input and the properties of the system section under consideration. In a real problem there are two stages, development of the ideal equivalent function structure and determination of its parameters. It is claimed that the optimization of parameters for the equivalent transform is sufficient, since the parameters of any nonlinear function can be shown to be analytic functions of the parameters of the equivalent transform. Optimization of the parameters proceeds first by partial differential methods, then by the formation of a Lyapunov V function from the sums of the squares of the errors, and a further search in the form of solutions to a system of nonlinear differential equations. Use of a digital computer on these equations has obvious advantages over a direct attack on a nonlinear algebraic system.

Making some reasonable assumptions, one can apply essentially the same mathematics to a situation in which the signal is subject to statistical noise.
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USSR

PUPKOV, K. A., et al, Priborostroyeniye, Vol 13, No 6, 1970, pp 27-33

The technique is shown as applied to a straight series system with simple feedback and to a system with two branches.

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USSR UDC 621.039.564.001.5

GOLUBEV, L. I. and LOMAKIN, S. S., Candidates of Technical Sciences

"Investigating Neutron Fields in the Novovoronezh Atomic Power Station Reactors"

Moscow, Teploenergetika, No. 10, 1971, pp 57-59

Abstract: Research into the neutron fields and their control in the process of atomic electrical power plants, as used in two water-moderated, water-cooled power reactors in the Novovoronezh Atomic Power Plant, are discussed. Both have an operating pressure of 100 kgs/cm^2. The service period of this type of reactor is determined by the service periods of its inner construction and its steel body, both of which are subject to the action of high-energy neutrons as well as force and temperature stresses. The article discusses the control systems of the neutron fields in the reactors and shows how the method of activation detection, as the most convenient one for intrareactor measurements, is used for measuring the parameters of neutron fields.
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CSO: 1860-W

- END -

USSR

UDC 389.6.539.125.5.07:621.039.564.2

ARABEY, B. G., BOCHIN, V. P., GARAPOV, E. F., LOMAKIN, S. S., PETROV, V. I., SAMOYLOV, P. S., KHMYZOV, V. V.

"Standardization of Measurements of Neutron Flux Density in Nuclear Reactors"

Tr. Soyuz. NII Priborostr. [Works of Union Scientific Research Institute for Instrument Building], 1972, No 17, pp 3-8, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.1364, from the Resume).

Translation: Problems of standardization of means and methods of measurement of neutron field parameters in nuclear reactors in order to provide unity and correctness of measurement of these parameters are discussed. One means of standardization is the use of activation detectors. Recommendations are presented for the composition of standard sets of activation detectors. It is suggested that a "standard" source of thermal neutrons based on the F-1 graphite reactor be used to calibrate detectors used for continuous measurements in reactors. The parameters of the neutron field in the reactor (arbitrary flux density, epithermal parameter, neutron gas temperature) are measured using activation detectors with errors of 2.5-3%. The use of the source described can allow calibration of neutron detectors with an accuracy of 4-7%.

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UDC 621.039.524.2.034.3

USSR

LOMAKIN, S. S., MORDOVSKAYA, T. S., PANFILOV, G. G., PETROV, V. I., SAMOYLOV, P. S., and KHMYZOV, V. V.

"Measuring the Effective Neutron Temperature in Uranium-Graphite Reactors"

Moscow, Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 36-37

Translation: A brief description is given for the technique used in measuring the effective neutron temperature in uranium-graphite reactors. The effective neutron temperature was measured by the integral method in the F-1 graphite research reactor using natural uranium and in the Pervaya (first) Atomic Electric Power Plant reactor in Obninsk. Ceramic activation detectors made of lutecium and manganese in the form of tablets 8 mm in diameter were used. The Westcott formalism modified for the case of detectors of finite thickness was used to process the results. The detectors were calibrated in a graphite prism with a thermal neutron spectrum. The activity of the detectors was measured on a scintillation γ-counter with a NaI (Tl) crystal and a PP-9 scaler which has an integral discriminator by means of which the corresponding thresholds were established. The measured saturation activities of the detectors, the cadmium

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USSR

LOMAKIN, S. S., et al., Atomnaya Energoya, Vol 29, No 1, Jul 70, pp 36-37

ratio, and the calibration factor were used to determine the neutron temperature. The measurements in the F-1 reactor were taken in the center of the core. The neutron temperature $T_{neutron}$ averaged with respect to four measurements with different pairs of lutecium-manganeses detectors was 348 ± 10°K.

The measurements at the Pervaya Atomic Electric Power Plant were taken in an empty process tube; $T_{neutron}$ was 393 ± 12°K. On the basis of the experimental data obtained and the published experimental data on $T_{neutron}$ for uranium-graphite systems, the empirical relation between the neutron temperature $T_{neutron}$ and the temperature of the medium T_0 was refined:

$$T_{neutron} = T_0\left(1 + A\frac{\Sigma_a(kT_0)}{\Sigma_s}\right),$$

where A = 16.5. The calculated value of A according to R. Coveqou for uranium-graphite systems is 11.

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USSR

UDC: 621.373.531(088.8)

LOMAKIN, V. L.

"A Square Pulse Generator"

USSR Author's Certificate No 270788, filed 21 Apr 69, published 26 Aug 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1Q208 P)

Translation: This Author's Certificate introduces a square pulse generator which contains a capacitive energy accumulator, a pulse transformer, and switching and quenching thyratrons. For short-circuit protection of the switching thyratron and the load, an additional protective thyratron is connected in series with the quenching thyratron and in parallel with the load. This protective thyratron is shunted by a variable resistor and a capacitor connected in series, the centertap of the resistor being connected to the control grid of the quenching thyratron.

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USSR

UDC 621.385.64

LOMAKIN, V. M., PANCHENKOV, L. V.

"On Self-Excitation of a Pulse Magnetron With Small Values of the Initial Emission of the Cathode (Cold Self-Excitation)"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 2, pp 33-42 (from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A128)

Translation: The results are described of an experimental investigation of self-excitation of power oscillations in a pulsed magnetron with a non-hot cathode. A qualitative explanation is given for the phenomenon observed. Self-excitation of the magnetron takes place because of an accumulation of electrons in the area of interaction under the influence of a variable which is determined by the form of the plate voltage at the magnetron. 2 ref. Summary

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USSR

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BUDAGOV, YU. A., VINOGRADOV, V. B., VOLOD'KO, A. G., DZHELEPOV, V. P., KIRILLOV-UGRYUMOV, V. G., KLADNITSKIY, V. S., KUZNETSOV, A. A., LOMAKIN, YU. F., MEL'NIKOVA, N. N., PONOSOV, A. K., FLYAGIN, V. B., SHLYAPNIKOV, P. V., MARTINSKA, G.(1), BOLDEA, V. (2), MIKHUL, A. (2), MUMUYANU, D. (2), PONTA, T. (2), FELEA, S. (2), and CHADRAA, B. (3), Joint Institute of Nuclear Research; (1) University imeni P. I. Shafarik, Koshitse, Czechoslovak SSR; (2) Institute of Atomic Physics, Bucharest, Romania; (3) Physics Institute of the Academy of Sciences Mongolian People's Republic, Ulan-Bator

"Study of the Mass Spectrum of a ΛK-System in $\pi^- p$-Interactions at 4 and 5.1 Gev/c"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 11, No. 1, 5 Jan 70, pp 31-35

Abstract: The results of a study of the spectrum of the effective masses of a ΛK-system are reported. The spectrum was obtained in investigating $\pi^- p$-interactions in a 24-liter and a 1-meter propane bubble chamber irradiated in π-meson beams of the proton synchrotron of the Joint Institute of Nuclear Research with pulses of 4 and 5.1 Gev/c, respectively. An investigation of the structure of the effective mass spectrum of a ΛK-system was of interest from the viewpoint of observing new

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USSR

BUDAGOV, YU. A., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 11, No. 1, 5 Jan 70, pp 31-35

resonances with zero strangeness and the decays of different isobars via the channel $N^* \to \Lambda + K$, to determine the relative probabilities of these decays. Approximately 230,000 photographs were analyzed for each bubble chamber. The effective mass spectra of ΛK^0 combinations for events in which the decays of a Λ-hyperon and a K^0-meson were simultaneously recorded in the chamber are graphed. The graphs show a considerable excess in the number of events above the background in the mass region 1.61-1.96 Gev/c^2. It is shown that this anomaly is not associated with the reflection of known resonances Y^* (1385) and K^* (890) in the ΛK^0-spectrum. The total excess in the number of events over the background in the mass interval 1.61-1.96 Gev/c^2 was 114 ± 13. The experimental data verify the existence of two resonances with masses about 1685 and 1935 Mev/c^2 and widths of the order of 150 Mev/c^2. It is concluded that the anomaly observed in the effective mass spectrum of ΛK can be explained only by the decay of the isobar S_{11} (1710), P_{11} (1750) via the channel $N^* \to \Lambda + K$ or by the existence of a new resonance with mass about 1685 Mev/c^2, as the data of R. Erbe et al indicate.

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USSR

BUDAGOV, YU. A., VINOGRADOV, V. B., VOLOD'KO, A. G., DZHELEPOV, V. P., KLADNITSKIY, V. S., KUTSIDI, N. K., Tbilisi State University, LOMAKIN, YU. F., MAKSIMENKO, V. A., MARTINSKA, G., FLYAGIN, V. B., KHARZHEYEV, YU. N., and SHANDOR, L.

"Possible Existence of $\pi^- \delta^0$-Resonance With a Mass of 270 MeV"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 12, 20 Jun 71, pp 665-668

Abstract: The preliminary results of this experiment were presented in 1970 at the Fifteenth International Conference on High-Energy Physics in Kiev. The authors find experimental signs of the possible existence of a new meson resonance. They observe a narrow peak when M = 270 MeV in the spectrum of effective masses of the system $\pi^- \delta^0$, which forms in the reaction $\pi^- p \rightarrow \pi^- p + (2.3)\delta^0$ at 5 GeV/c. The authors study events of the type $\pi^- p \rightarrow \pi^- p + (2.3)\delta^0$ which satisfy the following conditions: (1) the protons are identified by ionization and stopping in the camera, and the impulses of the protons do not exceed 900 MeV/c; (2) the length of the tracks of secondary charged particles from the star is no less then 2 cm, and the impulses of these particles are measured with an

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USSR

BUDAGOV, YU. A., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 12, 20 Jun 71, pp 665-668

accuracy no worse than 30%; (3) the γ-quanta have impulses greater than 30 MeV/c, measured with an accuracy no worse than 25%; (4) the scattering angles between the two γ-quanta do not exceed 2°. As a result of the experiment, the authors find that the effect which they observed is caused by the existence of a new meson resonance. The figures depict the distribution by effective mass of quanta. The article contains 2 figures and a bibliography of 7 entries.

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Acc. Nr.: AP0029427 Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, pp21-24

MOLECULAR WEIGHT AND THE NUMBER OF IONOGENIC GROUPS OF RISTOMYCINS AND CLOSE ANTIBIOTICS

Lomakina, N.N.; Murav'yeva, L.I.; Yurina, M.S.

Institute for New Antibiotics, Academy of Medical Sciences of the USSR, Moscow

Potentiometric titration of ristomycins, i. e. ristomycins A and B, ristocetins A and B, actinoidins A and B and vancomycin was performed. It was determined that the molecular weight of ristomycin A and ristocetin A was about 2300, that of ristomycin B, ristocetin B and actinoidins 2000—2100 and that of vancomycin 1600—1700. The ristocetins were found to contain just as ristomycins two primary amino groups. Five titrating phenolic hydroxyls were shown to be present in both ristocetins and ristomycins. Actinoidins and vancomycin contained 4 and 3 phenolyc hydroxyls respectively. One of the two amino groups present in vancomycin was primary.

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UDC: 620.193.2

USSR

ROZENFEL'D, I. L., LOMAKINA, S. V., OL'KHOVNIKOV, Yu. P., Institute of Physical Chemistry, Academy of Sciences of the USSR

"Influence of Alloying Elements on the Protective Properties of Films Formed on Aluminum Alloys During Corrosion in High-Temperature Water"

Moscow, Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 338-342

Abstract: The paper gives the results of an investigation of the protective properties of films which develop during corrosion of some binary aluminum alloys in water. The properties of the films and the mechanism of the process were determined from the electrode impedance, the thickness of the barrier layer and the loss tangent. The study specimens were pure aluminum (99.99%) and binary alloys with Cu, Fe, Cr, Ni, Ti and Zr in water at 200°C. It was found that all alloying elements without exception improve the protective properties of films formed on aluminum under these conditions. The effect is especially strong in the case of nickel. The results of experiments show that the main reason for increased corrosion resistance of alloyed aluminum is the change in properties of the hydroxide films formed during corrosion in high-temperature water.

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1/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--OSCILLOPOLAROGRAPHIC CHARACTERISTICS OF ARSENIC, III -U-

AUTHOR-(04)-DYAKOVA, A.P., KHARIN, A.N., LOMAKINA, T.P., DYAKOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 917-20

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ARSENIC, POLAROGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0436 STEP NO--UR/0080/70/043/004/0917/0920

CIRC ACCESSION NO--AP0126189

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 006

CIRC ACCESSION NO--AP0126189

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMAL CONDITIONS FOR OBTAINING AN OSCILLOPOLAROGRAM OF AS(III) WITH 0.004M (NH SUB4) SUB2 SO SUB4 WERE: INITIAL POTENTIAL MINUS 1.3 V, PEAK POTENTIAL MINUS 1.79 V, RATE OF APPLYING POTENTIAL 1 V-SEC, STOPS 7 SEC, AND PH 7. THE ESTD. RELATIVE ERROR IN DETN. OF 1.3 TIMES 10 PRIME NEGATIVE5-2 TIMES 10 PRIME NEGATIVE4 G-ION AS-L. WAS PLUS OR MINUS 2PERCENT.

UNCLASSIFIED

USSR

UDC 547.854:547.963.3

GRINEVA, N. I., and LOMAKINA, T. S., Novosibirsk Institute of Organic Chemistry Novosibirsk, Siberian Branch of the Academy of Sciences USSR

"Alkylating Derivatives of Components of Nucleic Acids. XVI. 5'-/3-(N-2-Chloroethyl-N-methylamino)propyl/phosphamides of Nucleosides and Oligonucleotides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2551-2555

Abstract: The 5'-/3-(N-2-chloroethyl-N-methylamino)propyl/phosphamides of uridine, adenosine, trideoxythymidylate, and trideoxyadenylate were prepared by reacting 3-(N-chloroethyl-N-methylamino)propylamine with the mixed anhydride formed by the 5'-phosphorylnucleotide or oligonucleotide and diphenylphosphoric acid. The phosphamide derived from uridine alkylated guanosine with the formation of 7-beta-(N-uridylyl-5'-(P→N)-aminopropyl-N-methylamino)-ethylguanosine.

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USSR UDC 547.854:547.963.3

GRINEVA, N. I., LOMAKINA, T. S., Novosibirsk Institute of Organic Chemistry Siberian Department of the Academy of Sciences of the USSR

"Alkylating Derivatives of Nucleic Acid Components. XIV. Synthesis of 5'-Phosphamides of Oligonucleotides, Derivatives of 4-(N-2-chloroethyl N-Methylamino)benzylamine"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1630-1634

Abstract: The paper describes the synthesis of 4-(N-2-chloroethyl N-methylamino)benzyl-5'-phosphamides, derivatives of thymidine and adenine oligonucleotides in which the oligonucleotide part of the molecule may determine the specificity of modification of nucleic acids by such reagents. It was found that activation of the internucleotide phosphoryl group with formation of active diphenyl pyrophosphate of the oligonucleotide takes place 8-10 times more slowly than activation of the 5'-phosphoryl group.

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USSR

UDC 632.95

KORNOUKHOVA, M. V., LOMAKINA, V. I., MANDEL'BAUM, Ya. A., GAR, K. A., GOLYSHIN, N. M., BOKAREV, Ye. M., FEDOSEYENKO, L. G., and BODROVA, M. R.

"Reaction of Thiophosphate Hydrazides with Sulfochlorides"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of works), No 2, Moscow, 1972, pp 194-199 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N567 by L. V. Razvodovskaya)

Translation: Compounds with the general formula $R^1(RO)P(S)NHNHSO_2R^2$ (I) and $R^3XP(S)(NHNHSO_2R^2)_2$ (II) (R = alkyl, R^1 = aryloxy, NHR, NR_2, R^2 2 R^3 = alkyl, aryl, X = O or NH) are obtained from the reaction of $R^1(RO)P(S)NHNH_2$ (III) or $R^3XP(S)(NHNH_2)_2$ (IV) with $ClSO_2R^2$. Examples. (1) 0.03 mole of Et_3N solution in 30 ml of C_6H_6 at 20° is added to 0.03 mole of III (R = Et, R^1 = PhO) and 0.03 mole of Et_3N in 70 ml of C_6H_6. The mixture is mixed for 5 hours at 35 to 40° and the sediment is filtered off. The filtrate is washed, dried, and the solvent distilled off to obtain I ($R = R^2$ = Et, R^1 = PhO, yield 66%, melting point 91-3°. I is obtained in a similar fashion (R, R^1, yield in %, melting point in °C or $n^{25}D$ and d_4^{25} are given): Me, iso-PrNH, Me, 70, 1.5204, 1.2964;

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KORNOUKHOVA, M. V., et al., Khim. sredstva zashchity rast, No 2, 1972, pp 194-199

Et, iso-PrNH, Ph, 56, 117-8; Et, iso-BuNH, Me, 84, 1.505, 1.1974; Ph, iso-PrNH, Et, 68, 66-8; Et, Me_2N, PhMe, 30, 78-80; Et, Et_2N, Et, 50, 1.5148, 1.2035; Et, Et_2N, PhMe, 55, 1.5350, 1.1756; Et, PhO, Ph, 55, 72-4. (2) 0.05 mole of $PhSO_2Cl$ at 20° is added to a solution of 0.05 mole of IV (R^3X = PhO) and 0.05 mole of Et_3N in 100 ml of alcohol. The mixture is mixed for 6 hours at 20° and 8 hours at 60-70°; the alcohol is distilled off in part. The sediment is filtered off and the filtrate evaporated to obtain II (R^2=R^3=Ph, X = O), yield 56%, melting point 168-70°. II is obtained in a similar fashion (R^3X, R^2 yield in %, melting point in °C are given): EtO, Et, 50, 158-60, EtO, Ph, 30, 102-5; PhO, Me, 45, 173-5; PhNH, Me, 46, -. I and II have fungicidal and weak contact insecticidal activity.

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USSR

UDC 632.95

MANDEL'BAUM, Ya. A., LOMAKINA, V. I., KUTUZOVA, L. R.

"A Method of Synthesizing Dialkyl 1-Aryl-2-chlorovinyl Phosphates"

USSR Author's Certificate No 289732, filed 28 Jul 69, published 22 May 72 (from RZh-Khimiya, No 9, May 73, abstract No 9N494 by N. V. Lebedeva)

Translation: Compounds of the general formula $(RO)_2P(O)OC(R')=CHCl$ (I) (R = alkyl; R' = chlorine-substituted or bromine-substituted Ph) are synthesized by reacting $(RO)_2P(O)Cl$ (II) with compounds of the formula $ClCH_2C(O)R'$ (III) in inert organic solvents in the presence of alkaline agents with a yield of up to 85%. Example. 0.1 mole of II (R = Me) is added to 0.2 mole of finely crushed NaOH in 300 ml of ether. The mixture is heated to boiling, and a solution of 0.1 mole of III ($R' = 2,4,5\text{-}Cl_3C_6H_2$) in ether is slowly added. The reaction mass is boiled for 4 hours, allowed to stand for ~16 hours, filtered, evaporated, and compound I (R = Me, $R' = 2,4,5\text{-}Cl_3C_6H_2$) is produced with a yield of 83%, melting point 94-5°. By a similar method compound I is produced (R = Et, $R' = 2,4,5\text{-}Cl_3C_6H_2$) with a yield of 56%, melting point 77-78.5°. These compounds can be used as insecticides.
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USSR

UDC 632.95

MANDEL'BAUM, Ya. A., LOMAKINA, V. I., KORNOUKHOVA, M. V., and MEL'NIKOV, N. N.

"Synthesis of Bis[β-alkyl(aryl)sulfonylhydrazides] of Thiophosphoric Acids"

USSR Author's Certificate No 332093, filed 26 Feb 70, published 17 Apr 72 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom (I, L-S), No 1(II), 1973, Abstract No 1N452P by T. A. Belyayeva)

Translation: A compound with a general formula $RP(S)(NHNHSO_2R')_2$ (I) (R = alkoxyl, aroxyl, or amino group; R' = alkyl or aryl) is synthesized by the reaction of $RP(S)(NHNH_2)_2$ (II) with $R'SO_2Cl$ (III) in the presence of HCl acceptor in solvent (C_6H_6, alcohol). Example. To 0.25 mole II (R = EtO) in 150 ml C_6H_6 0.5 mole Et_3N is added at 40°C followed by a slow addition of 0.25 mole III (R'= Et). The reaction mixture is stirred for 2 hr at 60°, and for 1 hr at 80°C, filtered at 70°C, and concentrated by evaporation. The yield of I (R = EtO, R'= Et), m.p. 158-160°C, is 50%. Compound I prepared in the same manner were characterized by (R, R', m.p. in °C, yield %, in that order): EtO, Ph, 102-105 (alc.), 30; PhO, Me, 173-175 (ether), 45; PhO, Ph, 168-170, 56. Compound I possesses acaricidal and fungicidal properties.
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USSR

UDC 632.95

MANDEL'BAUM, YA. A., LOMAKINA, V. I., MEL'NIKOV, N. N.

"Derivatives of Phosphoric and Dithiocarbamic Acids"

V sb. Khim. sredstva zashchity rast. (Chemical Means of Plant Protection — collection of works), vyp. 1, Moscow, 1970, pp 104-110 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N426)

Translation: In order to study their pesticidal activity, derivatives of phosphoric and dithiocarbamic acids were synthesized with the general formulas $(RO)(R')(X)SCH_2CH_2SC(S)NR''_2$ (I), $(RO)_2P(S)SCH_2COSC(S)NR''_2$ (II) and $R_2NC(S)CH_2CH_2R'''$ (III) (everywhere, R = alkyl, R' = alkoxyl or aryl, R'' = C_2-C_5-alkyl, R''' = aryloxy or the arylmercapto group X = O or S). A solution of 0.025 moles of $ClCH_2CH_2SC(S)N(Pr\text{-}iso)_2$ in 50 ml of ethanol is added to a solution of 0.025 moles of $(BuO)_2P(S)SK$ in 50 ml of absolute ethanol at 20° and with mixing. The mixture is heated for 5 hours at 50-65° and filtered, separating I (R = Bu, R' = BuO, R'' = iso-Pr, X = S), $C_{17}H_{36}NO_2PS_4$ from the mother liquor; the yield is 60.7% with a melting point of 46-9° (ethanol). The I is obtained

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MANDEL'BAUM, YA. A., et al., Khim. sredstva zashchity rast., vyp. 1, Moscow, 1970, pp 104-110

analogously (the R, R', R", X and the molecular formula are recalculated, the yield in %, $n^{20}D$, d_4^{20}): Et, EtO, Pr, S, $C_{13}H_{28}NO_2PS_4$, 70.6, 1.5726, 1.639; Pr, PrO, Pr, S, $C_{15}H_{36}NO_2PS_4$, 73, 1.5512, 1.1186; Pr, PrO, iso-C_5H_{11}, S, $C_{19}H_{40}NO_2PS_4$, 84, 1.5343, 1.0882; Bu, BuO, iso-C_5H_{11}, S', $C_{21}H_{44}NO_2PS_4$, 74, 1.5312, 1.0704; Et, Ph, Pr, O, $C_{17}H_{28}NO_2PS_2$, 19, 1.5619, 1.1620. The I are also obtained by the interaction of equimolecular amounts of $R''_2NC(S)SM$ (M is an alkali metal) with $(RO)(R')P(X)SCH_2CH_2Cl$. In particular, I are synthesized by the indicated method (R, R', R", X and the molecular formula, the yield in %, $n^{20}D$ and d_4^{20} are given): Et, EtO, Et, S, $C_{11}H_{24}NO_2PS_4$, 41.6, 1.5509, 1.1648; Pr, PrO, Et, S. $C_{13}H_{28}NO_2PS_4$, 50, 1.5495, 1.1416; Bu, BuO, Et, O, $C_{15}H_{32}NO_3PS_3$, 56.2, 1.5294, 1.1176. A solution of 0.02 moles of $ClCH_2C(O)SC(S)NR''_2$ in 10-20 ml of methyl ethyl ketone is added to the suspension of 0.02 moles of $(PrO)_2PSSK$ in 80-90 ml of methyl elthyl ketone at 20-22°; the mixture is mixed for 12 hours at 50-75°, isolating II (R = R" = Pr), $C_{15}H_{30}NO_3PS_4$, yield 41.2% $n^{20}D$ 2/4

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MANDEL'BAUM, YA. A., et al., Khim. sredstva zashchity rast., vyp. 1, Moscow, 1970, pp 104-110

1.5091, d_4^{20} 1.0589. The II is obtained analogously (R, R", the molecular formula, the yield in %, $n^{20}D$, d_4^{20} are given): Et, Pr, $C_{13}H_{26}NO_3PS_4$, 25, 1.5218, 1.1496; Pr. Et, $C_{13},H_{26}NO_3PS_4$, 58.7, 1.5419, 1.2104;Bu, Et, $C_{15}H_{30}NO_3PS_4$, 54.6, 1.5366, 1.1917; Bu, Pr, $C_{17}H_{34}NO_3PS_4$, 53, --, --, melting point 42-6°. A solution of 0.025 moles of $R_3NC(S)SCH_2CH_2Cl$ in 10-15 ml of C_6H_6 is added to a suspension of PhONa (obtained from 0.025 moles of PhOH and 0.025 metallic Na at 20°) in 75 ml of C_6H_6. The mixture is heated for 6 hours at 70-75°, isolating III (R = Pr, R"' = PhO), $C_{15}H_{23}NOS_2$, yield 82%, $n^{20}D$ 1.5581, d_4^{20} 1.0733. The I are obtained analogously (R, R"', the molecular formula, the yield in %, $n^{20}D$, d_4^{20} are given): Et, PhO, $C_{13}H_{19}NOS_2$, 40.3, 1.5828, 1.1282; Et, 4-ClC_6H_4O, $C_{13}H_{18}ClNOS_2$, 63, 1.5889, 1.2047; Et, 2,4-$Cl_2C_6H_3O$, $C_{13}H_{17}Cl_2NOS_2$, 71, 1.5932, 1.2352; Et, PhS, $C_{13}H_{19}NS_3$, 60, 1.6120, 1.1385; Et,

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MANDEL'BAUM, YA. A., et al., Khim. sredstva zashchity rast., vyp. 1, Moscow, 1970, pp 104-110

$4\text{-}ClC_6H_4S$, $C_{13}H_{18}ClNS_3$, 67.5, 1.6361, 1.2493; Pr, $4\text{-}ClC_6H_4O$, $C_{15}H_{22}ClNOS_2$, 76, 1.5730, 1.1728; Pr, $2,4\text{-}Cl_2C_6H_3O$, $C_{15}H_{21}Cl_2NOS_2$, 62, 1.5732, 1.878; Pr, PhS, $C_{15}H_{23}NS_3$, 61, 1.5955, 1.1086; Pr, $4\text{-}ClC_6H_4S$, $C_{15}H_{22}ClNS_3$, 50, 1.6120, 1.916.

The I-III do not have insecticide activity. Weak herbicidal and significant fungicidal properties were exhibited.

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USSR

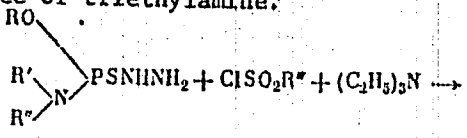
UDC 547.26'118

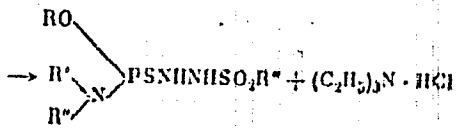
KORNOUKHOVA, M. V., LOMAKINA, V. I., and MANDEL'BAUM, Ya. A., All-Union Scientific Research Institute of Chemicals for Plant Protection

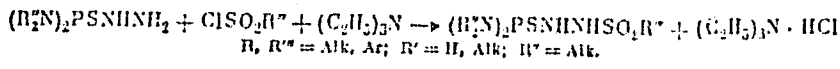
"β-Substituted Sulfonyl Hydrazides of Thiophosphoric Acids"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2004-2007

Abstract: Some sulfonyl hydrazides possess fungicidal and pesticidal properties. This study concerns the synthesis of β-sulfonyl hydrazides of thiophosphoric acid ester amides and thiophosphoric acid ester diamides by the reaction of the corresponding hydrazides with alkane(arnna)sulfonyl chlorides in the presence of triethylamine.







R, R" = Alk, Ar; R' = H, Alk; R" = Alk.

USSR

KORNOUKHOVA, M. V., et al., Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2004-2007

Analysis of the biological activity of these compounds indicates that sulfonyl hydrazides of the ester amides of the formula $\begin{matrix}RO\\R'\end{matrix}>PSNHNHSO_2R'$ possess fungicide activity, while bisdialkylsulfonyl hydrazides of bisdialkyl-thiophosphoric acid ester diamides of the formula $(R_2N)_2PSNHNHSO_2R'$ exhibit insecticidal properties. The structure of the above compounds are supported by IR and PMR spectra. Tables in the original article cite the radicals, yields, formulas and calculation of the new compounds.

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1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THE CERULOPLASMIN CONTENT IN NEW BORNS WITH PNEUMONIA -U-

AUTHOR-(02)-LOMAKO, L.T., SOSINA, A.M.

COUNTRY OF INFO--USSR

SOURCE--ZDRAVOOKHRANENIYE BELORUSSII, 1970, NR 5, PP 42-44

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PNEUMONIA, BLOOD PLASMA

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PROXY REEL/FRAME--2000/1471 STEP NO--UR/0477/70/000/005/0042/0044

CIRC ACCESSION NO--AP0125099

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125099

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CERULOPLASMIN ACTIVITY HAS BEEN DETECTED IN THE PERIPHERAL BLOOD OF THE NEW BORNS WHO ARE SICK OF PNEUMONIA IN THE DYNAMICS OF THE AFFECTION AND IN THE CONTROL GROUP OF HEALTHY CHILDREN OF THE SAME AGE (2-4 WEEKS OF LIFE). THE CERULOPLASMIN CONTENT IN THE HEALTHY NEW BORNS HAS COMPOSED 16.87 MG PERCENT PLUS OR MINUS 0.85. AT THE BEGINNING OF THE AFFECTION WITH PNEUMONIA, THE LATTER OFTEN DEVELOPED WITH SCARE CLINICAL AND LABORATORY DATA; A LOWERING OF THE CERULOPLASMIN ACTIVITY HAS BEEN MARKED, 13.95 MG PERCENT PLUS OR MINUS 0.6 (P SMALLER THAN 0.05), ESPECIALLY IN PATEINTS WITH SEVERE FORMS OF PNEUMONIA. DURING THE PERIOD OF CLINICAL CONVALESCENCE THE CERULOPLASMIN ACTIVITY HAS INCREASED AND REACHED THE HEALTHY NEW BORNS' LEVEL. FACILITY: BELORUSSKIY NAUCHNO ISSLEDOVATEL'SKIY INSTITUT OKHRANY MATERINSTVA I DETSTVA.

UNCLASSIFIED

4

USSR UDC 621.382.2

DOMANEVSKIY, D.S., LIBOV, L.D., LITVINOV, V.L., [redacted], V.M., NOVOSELOV, A.M., RAVICH, V.N., TKACHEV, V.D., UKHIN, N.A.

"Effect Of Radiation On Gallium Phosphide P-N Junctions"

V sb. Radiats. fiz. nemet. kristallov. T.3. Ch.2. (Radiation Physics Of Nonmetallic Crystals. Vol. 3, Part 2--Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 50-53 (from RZh--Elektronika i yeye primeneniye, No 12, Dec 1971, Abstract No 12B534)

Translation: The p-n junctions were obtained by the method of liquid epitaxy with n-GaP. The epitaxial p-region was doped with O_2 and Zn. Irradiation was done with reactor neutrons and also electrons with 28 Mev energy at temperatures above 50° C. The current-voltage characteristics and the electroluminescent spectra were investigated at room and nitrogen temperatures. After irradiation, the forward branch of the current-voltage characteristics is shifted to the region of smaller voltages (the lifetime of minority carriers is decreased) and subsequently with an increase of the flux -- to the side of the larger voltages (increase of the resistivity of the initial material). After irradiation the intensity of all the spectral bands of electroluminescence are decreased. The

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DOMANEVSKIY, D. S., et al., Radiats. fiz. nemet. kristallov, T.3. Ch.2. (Radiation Physics Of Nonmetallic Crystals. Vol. 3, Part 2--Collection Of Works), Kiev, "Nauk. dumka," 1971, pp 50-53 (from RZh--Elektronika i yeye primeneniye, No 12, Dec 1971, Abstract No 12B534)

intensity of the red band with a flux decreased approximately 1.5 times more slowly that the green. The spectral composition of the radiation changed after irradiation. The results presented indicate that the change of the electrical and optical characteristics of GaP p-n junctions after irradiation have the same character as in the case of GaAs p-n junctions. 3 ill. 1 tab. 4 ref. I.M.

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USSR

UDC 621.382.2.002:535.376

VIL'KOTSKIY, V.A., DOMANEVSKIY, D.S., LITVINOV, V.L., LOMAKO, V.M., NOVOSELOV, A.M., TKACHEV, V.D., UKHIN, N.A.

"Optical And Electrical Properties Of Irradiated GaAs Diodes (Annealing)"

V sb. Radiats. fiz. nemet. kristallov (Radiation Physics Of Nonmetallic Crystals--Collection Of Works), Vol 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 44-49 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B285)

Translation: The effect was investigated of isochronous annealing on the spectra of radiative recombination of n-GaAs p-n junctions irradiated by fast reactor neutrons. An analysis of the results obtained makes it possible to conclude that during neutron irradiation, the decrease of lifetime is determined by the regions of disorder which are effective centers of nonradiative recombination. 3 ill. 6 ref. N.S.

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USSR

UDC 537.311.5:546.19'681

VIL'KOTSKIY, V.A., DOMASHEVSKIY, D.S., [illegible] V.N.

"Effect Of Irradiation By Neutrons And γ-Quanta On The Spectra Of Cathodoluminescence Of GaAs"

V sb. Radiats. fiz. nemet. kristallov (Radiation Physics Of Nonmetallic Crystals-Collection Of Works), Vol 3, Part 2, Kiev, "Nauk.dumka," 1972, pp 10-16 (From RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10E50)

Translation: The effect was studied of penetrating radiation on the luminescence spectra of n- and p-type GaAs with concentrations of majority carriers of $10^{14} - 10^{16}$ cm^{-3} at 300° K with the object of clarifying the nature and processes of formation of majority luminescence centers in these crystals. Irradiation by γ-quanta of Co^{60} was conducted at a temperature of 20° C and by fast neutrons at 70° C. The integral flow of γ irradiation amounted to $3.6 \cdot 10^{15} - 5 \cdot 10^{17} cm^{-2}$ and by neutrons $10^{13} - 10^{17} cm^{-2}$. For excitation of nonequilibrium carriers a beam of fast electrons with an energy of 50 kev was used. The spectra were plotted at an 80° K temperature. In the luminescence spectra of the irradiated specimens, the formation was observed of a new band with a maximum in the region of 1.35 ev which was accompanied by a shift of the maximum of edge radiation into the 1.495 ev region and also a shift of the 0.96 ev band into the 1.01 ev region. I.I.

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USSR

UDC: 621.382.2

LITVINOV, V. L., LOMAKO, V. M., TKACHEV, V. D., and UKHIN, N. A.

"Recombination Radiation Mechanism in Strongly Alloyed GaAs p-n Junctions"

Leningrad, Fizika i tekhnika poluprovodnikov, Vol 4, No 12, 1970, pp 2236-2240

Abstract: There are two explanations of the nature of the movable band observed in strongly alloyed p-n junctions under the application of small bias voltages: one is the model of diagonal tunneling; the other the model of filled zones. The authors investigate these two possible mechanisms by estimating their contribution through the use of their different dependence on the life time of the current carriers. In the experiments described, two types of p-n junction were investigated. The first was developed by the diffusion of zinc in n-type GaAs alloyed with Te; the second by melting tin into p-type GaAs alloyed with Zn. Volt-ampere characteristics and recombination radiation spectra of the two types were measured and plotted at 80 and 300° K before and after irradiation by high-speed neutrons. Immovable bands sometimes observed simultaneously were also studied. The authors express their gratitude to V. P. Smilg for his useful comments.

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USSR

UDC 621.382.2

DOMANEVSKIY, D. S., LITVINOV, V. L., LOMAKO, V. M., SMILGA, V. P., TKACHEV, V. D., UKHIN, N. A., Belorussian State University imeni V. I. Lenin, Minsk

"Radiation Changes in the Voltage-Current Characteristics of Heavily Doped Gallium Arsenide PN Junctions"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 8, Aug 70, pp 1425-1431

Abstract: An investigation is made into the change in electrical characteristics of heavily doped gallium arsenide PN junctions under the effect of irradiation in a mixed (neutron-gamma) field of a reactor and fast electrons with an energy of 28 MeV. In many specimens tunnel transitions are detected in the initial state with the participation of defect levels in the forbidden band. Emission brings about an increase in excess current due to the introduction of radiation defects which produce closely situated levels throughout the entire forbidden band. An increase was observed in the density of states in the tails of the bands due to activation of the electrically inactive part of the dopants under the effect of radiation. In the case of high radiation intensities, there is an increase in excess current in narrow PN junctions due to the disordered regions which appear in the junction.

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USSR

UDC[539.125/.128.004+577.391](023)

GOL'DIN, L.L., DZhELEPOV, V.P., LOMANOV, M.F., SAVChENKO, O.V., and KhOROShKOV, V.S.

"The Use of High-Energy,Heavy Charged Particles in Medicine"

Moscow, Uspekhi Fizicheskikh Nauk, Vol 110, No 1, May 73, pp 77 - 99

Abstract: Present methods of radiation treatment involve primarily the use of X-rays, gamma radiation,and light particles such as electrons. These techniques are severely limited by the necessity of restricting radiation damage to non-cancerous tissues and the difficulty of controlling the depth of penetration of such radiation. The development of more powerful accelerators makes possible the use of heavy charged particles at high energies. The penetration of these particles through various materials can be much more closely controlled, making it possible to confine the damaging effects to the malignant tissues with much greater accuracy. This effect is further strengthened by the relatively low scattering of heavier particles. For all radiation therapy except intercranial surgery and a few other special cases, a beam of Pi-mesons appears to offer the best characteristics.

USSR

GOL'DIN, L. L., et al., Uspekhi Fizicheskikh Nauk, Vol 110, No 1, May 73, pp 77-99

The article discusses the uses of radiation therapy, both alone and in combination with surgery, describes the effects of various types of radiation on the human body, and discusses possible future developments. Several radiation therapy installations are described, and there is a survey of experiments in various countries. The authors believe that large-scale centers for high energy and heavy-particle radiation therapy should be established now and that the development of suitable Pi-meson radiation apparatus should be carried out.

Four tables, 15 illustrations, 48 bibliographic citations (mostly from western sources).

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1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE FORMATION OF DOSE FIELDS ON PROTON BEAM OF ITEP ACCELERATOR -U-

AUTHOR-(05)-BLOKHIN, S.I., GOLDIN, L.L., KLEYNBOK, YA.L., LOMANOV, M.F., ONOSOVSKIY, K.K.
COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 64-68

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

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CONTROL MARKING--NO RESTRICTIONS

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CIRC ACCESSION NO--AP0120601
UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120601

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DISCUSSES THE TECHNIQUE OF FORMATION OF DOSE FIELDS OF WIDE PROTON BEAMS ALONG THE AXIS OF THE BEAM AND IN TRANSVERSE DIRECTION, AS WELL AS THE CONSTRUCTIVE FEATURES SPECIFIC FOR THE EQUIPMENT USED FOR THESE PURPOSES. DOSE FIELDS FORMED ON A MIDEICO BIOLOGICAL PROTON BEAM OF ITEP ACCELERATOR. FACILITY: INSTITUT EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI AN SSSR.

UNCLASSIFIED

USSR

UDC: 681.327.66

LOMANOV, V. P., BORISOV, B. M.

"A Data Storage Unit"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 20, Jul 72, Author's Certificate No 343302, Division G, filed 17 Sep 70, published 22 Jun 72, p 175

Translation: This Author's Certificate introduces a data storage unit which is made up of matrices, each of which is divided into two identical parts, left and right, whose memory elements are based on two cores with a resistive coupling winding. The cores are threaded by interrogation, record and bias windings separate for each half of the matrix. Also making up the storage unit are DC shapers and a transformer. As a distinguishing feature of the patent, speed and reliability are increased by connecting the bias winding of each section on the left of the preceding matrix in series-aiding with the bias winding of each right section of the following matrix, and connecting the bias winding of each section on the right of the preceding matrix in series-aiding with the bias winding of the left section of each following matrix. The inputs

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LOMANOV, V. P., BORISOV, B. M., USSR Author's Certificate No 343302

of the bias windings of each half of the initial matrix are connected respectively to the two DC shapers, and the outputs of the bias windings of each half of the final matrix are connected to the transformer windings, the bias windings of one half of the matrix being connected aiding, while the others are opposed.

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USSR

UDC 621.317.444:546.35:621.317.421

LOMANYY, V. D.

"Certain Characteristics of a Rubidium Vapor Magnetometer for Measuring Magnetic Induction in the Range $5 \cdot 10^{-7}$ - 10^{-5} Tesla"

Tr. metrol. in-tov SSSR (Works of the Metrology Institutes of the USSR), 1971, No. 113(173), pp 66-168 (from Referativnyy Zhurnal, Metrologiya i izmeritel'naya tekhnika, No 11, Nov 71, Abstract No 11.32.1742)

Translation: The signal-to-noise ratio and the half-width signal were determined as a function of the absorption chamber temperature, the amplitude of the radio frequency field, the intensity of the polarized light flux and the angle of inclination of the optical axis of the magnetometer of the device to the magnetic induction vector measured for the purpose of determining the metrology possibilities of rubidium-vapor magnetometers. 2 ill., 2 ref.

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Public Health, Hygiene and Sanitation

USSR UDC 616-057:796

LOMAREV, P. I.; POPOV, S. N.; TYURIN, A. M.; SHAPKAYTS, Yu. M.; Laboratory of Functional Diagnostics, Institute of Physical Culture imeni P. F. Lesgaft

"Effect of Athletic Activity on the Incidence and Duration of Some Diseases"

Moscow, Sovetskaya Meditsina, Vol 34, No 2, Feb 71, pp 100-103

Abstract: The incidence and duration of diseases involving an initial request for medical treatment was determined for employed persons engaged in athletics (group A) and not engaged in athletics (group B). The persons in both groups were otherwise healthy males, most of them young. The study was conducted for three years. The incidence of diseases per 1,000 persons was as follows: simple sore throat A 48, B 135; influenza A 33, B 24; severe colds A 554, B 920; furunculosis and abscesses A 99, B 167; diseases of the locomotor apparatus A 127, B 107; diseases of the peripheral nervous system A 44, B 19; diseases of digestive organs A 29, B 45; eye diseases A 75, B 99. The

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LOMAREV, P. I., et al, Sovetskaya Meditsina, Vol 34, No 2, Feb 71, pp 100-103

average incidence of all diseases per 1,000 persons was 126 and 189 for group A and B, respectively. The time in days lost from work per case was 4.9 and 7.7 for group A and B, respectively. The higher incidence of diseases of the peripheral nervous system (radiculitis, plexitis, neuritis, etc) and of the locomotor apparatus for persons engaged in athletics can be explained by excessive strain in athletic training due to the injudicious nature of this training. The average number of days lost due to any single type of disease, including diseases of the peripheral nervous system and of the locomotor apparatus, was lower for athletes than non-athletes.

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USSR

UDC 621.039.524.034.3

NESTERENKO, V. B., LOMASHEV, B. I., VERZHINSKAYA A. B., KOZLOVSKIY, V. G., SAKOVICH, A. T.

"First Experience in Realizing Thermal Cycles in a Dissociating Gas $NO_4 \rightleftarrows 2NO_2 \rightleftarrows 2NO + O_2$"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok — V sb. (Dissociating Gases as Heat Transfer Agents and the Working Medium of Power Plants — Collection of Works), Minsk, Nauka i Tekhn. Press, 1970, pp 95-104 (from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5U183)

Translation: The experimental testing units (the thermal D-50 and the power Vulkan) and the experience accumulated during operation of them in a dissociating medium $N_2O_4 \rightleftarrows 2NO_2 \rightleftarrows 2NO + O_2$ are presented for operation by a closed gas-liquid cycle scheme with the following parameters: 1) p = 10-60 absolute atmospheres, T = 25-600° C; 2) p = 3-15 absolute atmospheres, T = 25-500° C. The first operating experience in N_2O_4 confirmed the reversibility of the chemical reaction of dissociation of the system $N_2O_4 \rightleftarrows 2NO_2 \rightleftarrows 2NO + O_2$. Methods of measuring all the necessary values — temperature, pressure, flow rate and so on — are developed. This method of operation permits an approach to the

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NESTERENKO, V. B. et al., Dissotsiiruyushchiye gazy kak teplonositeli i rab. tela energ. ustanovok, Minsk, Nauka i Tekhn. Press, 1970, pp 95-104

operation of more powerful heat and power plants. There are 2 illustrations and 1 table.

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ASNIN, V. M., LOMASOV, YU. N., and ROGACHEV, A. A., Physicotechnical Institute imeni A. F. Ioffe, Leningrad

"Formation Energy of Biexcitons in Silicon"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 11, Nov 72, pp 3457-3458

Abstract: In a kinetic study of biexciton formation J. D. CUTHBERT found that $E_b = 0.6 \cdot 10^{-3}$ ev. Such a low binding energy value, however, is in conflict with the fact of the experimental observation of exciton molecules in silicon at $T = 4.2^{\circ}$ K and exciton concentrations of 10^{12}-10^{14} cm^{-3}. Actually, the maximum possible number of biexcitons that can be attained under thermal equilibrium between excitons and biexcitons is determined by the mass-action law

$$n_b = n_{ex}^2 \frac{N_b}{N_{ex}^2} e^{-E_b/kT}, \quad (1)$$

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ASNIN, V. M., et al., Fizika Tverdogo Tela, Vol 14, No 11, Nov 72, pp 3457-3458

where N_{ex} and N_b are the effective densities of states for excitons and biexcitons. The relation between exciton and biexciton concentrations is determined by the equation

$$\frac{dn_b}{dt} = \sigma v n_{ex}^2 - \frac{n_b}{\tau_b} - \sigma v \frac{N_{ex}^2}{N_b} n_b e^{-\varepsilon_b/kT}, \qquad (2)$$

where σ is the cross section for the formation of a biexciton from two free excitons, v is the thermal exciton velocity, τ_b the biexciton lifetime. For excitation conditions close to stationary, it follows from (2) that

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ASNIN, V. M., et al., Fizika Tverdogo Tela, Vol 14, No 11, Nov 72, pp 3457-3458

$$n_b = \frac{cvn_{ex}^2}{\frac{1}{\tau_b} + sv\frac{N_{ex}^2}{N_b}e^{-E_b/kT}}. \qquad (3)$$

A flash lamp was used to excite luminescence, and n- and p-type silicon was used for the measurements. The biexciton binding energy E_b was found to be equal to $5.5 \cdot 10^{-3}$ ev. The variation of n_{ex}^2/n_b with temperature is very slight. The formation cross section for an exciton molecule is close to 10^{-14} cm^2.

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USSR UDC 581

KANEVCHEVA, I. S., ZEMLINA, A. G., YEFREMENKO, YE. A., and LONATSKAYA, YE. N.,
North Caucasian Scientific Research Institute of Phytopathology, Krasnodar

"Effect of Wheat Streak Mosaic Virus on the Composition of Nucleic Acids in Wheat Leaves"

Moscow, Fiziologiya Rasteniy, No 1, 1971, pp 186-189

Abstract: Infection of wheat (Bezostaya 1 variety) leaves with streak mosaic virus resulted in destruction of the fraction of high molecular weight nucleic acids. The quantity of nucleic acids extracted from the leaves of diseased plants was only 56 to 79% of that obtained from healthy plants. On columns with methylated albumin, the nucleic acids were separated into several fractions - soluble, DNA, and ribosomal nucleic acid. The infected plants were characterized by a decrease in the content of ribosomal nucleic acids and accumulation of soluble nucleic acids. Virus reproduction is accompanied by the destruction of normal nucleic acids. This seems to be the main reason for the damage done by the disease. None of the fractions studied or even a total extract of nucleic acids proved to be infectious. Competition between normal and viral RNA for the "cell receptors" in the leaves is presumed responsible.

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USSR

UDC 51:621.391

DEDOV, L. A., LOMAYEV, G. V.

"Graphoanalytical Method of Determining the Information Quantity at the Output of Measuring Devices"

V sb. Primeneniye vychisl. tekhn. v mashinostr. (Application of Computer Engineering in Machine Building -- collection of works), Izhevsk, 1971, pp 92-98 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V440)

Translation: This paper is devoted to the development of the engineering method of analyzing information at the output of a digital measuring device or any other measuring device with a digital scale.

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USSR

UDC 51:621.391

DEDOV, L. A., LOMAYEV, G. V.

"On an Analytical Graphic Method for Determining the Quantity of Information at the Output of Measuring Devices"

V sb. Primeneniye vychisl. tekhn. v mashinostr. (Application of Computer Engineering in Machine Building -- Collection of Works), Izhevsk, 1971, pp 92-98 (from RZh-Matematika, No 9, Sep 72, Abstract No 9V440)

Translation: This paper concerns a development of an engineering method for determining information at the output of a digital measuring device or any other measuring device with a digital scale. Authors abstract.

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USSR

UDC 519.1

KROPACHEV, L. A. and LOMAYEV, G. V.

"Calculation of Twice-Symmetric Systems by the Method of Bi-directional Graphs"

Izhevsk, Avtomat. ustroystva ucheta i kontrolya--Sbornik (Automatic Devices for Recording and Monitoring -- Collection of Works), No 6, 1970, pp 264-273 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V388, by V. Yevstigneyev)

Translation: The problem of the transformation of the so-called twice-symmetric electric circuit to a form that permits application to calculation of the transfer coefficients based on the Mason formula, using an algorithm developed by the authors for multi-component chain circuits (Abstract No 6V387), is solved.

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USSR

UDC 539.376+532.135

LOMAYEV, G. Z.

"Investigation of Relaxation and Creep on the Basis of Rheological Models"

Tr. Krasnodar. politekhn. in-t (Works of Krasnodar Polytechnical Institute), 1971, No. 37, pp 21-29 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9V530)

Translation: A rheological model is proposed which leads to a relationship between stress σ and deformation ε

$$(b+b_1x)\dot{\varepsilon}+(c_1+b_2x+b_1\dot{x})\varepsilon=\sigma+a_0\dot{\sigma}$$

where x is a given function of time and the remaining parameters are constants. Creep and relaxation for several particular forms of the function $x(t)$ are discussed on the basis of this equation. V. S. Namestnikov.

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1/2 020 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--THE EFFECT OF A TESTING MACHINE UPON THE PRECISION OF DETERMINATION OF THE STRENGTH CHARACTERISTICS OF METALS -U-

AUTHOR--LOMAYEV, G.Z.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZMERITEL'NAYA TEKHNIKA, NO 2, 1970, PP 42-44

DATE PUBLISHED----------70

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TOPIC TAGS--METAL TEST, ECONOMICS, METALLURGIC TESTING MACHINE

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2/2 020 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0115394

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNDER MODERN CONDITIONS IT IS NOT POSSIBLE TO PROVIDE FOR ADHERENCE TO EQUIVALENT CONDITIONS WHEN TESTING STANDARD SAMPLES OF DIFFERENT DIMENSIONS AND SHAPES ON DIFFERENT MEASURING MACHINES, OR EVEN ON THE SAME MEASURING MACHINE AND CONSEQUENTLY THE BASIC METROLOGICAL PREMISE FOR OBTAINING COMPARABLE RESULTS, AND FOR EVALUATING THE ACTUAL PROPERTIES OF MATERIALS WITH RESPECT TO ONE ANOTHER, IS VIOLATED. A BASIC REASON FOR THIS IS THE FACT THAT THE STANDARDS DO NOT ALLOW FOR THE EFFECT, UPON THE TEST RESULTS, OF THE ELASTIC PLIANCY OF THE TESTING MACHINE ITSELF AND FOR VIOLATIONS OF THE STATIC NATURE OF THE TESTS. THE MACHINE NOT ONLY MEASURES THE RESISTANCE OF THE SAMPLE, BUT ALSO ARBITRARILY ALTERS THE TEST PROCEDURE PROVIDED FOR BY THE STANDARD. IN ORDER TO PROVIDE FOR EQUIVALENT TEST CONDITIONS, THE ASSIGNED TEST PROCEDURE MUST BE CONDUCTED AND MAINTAINED BY AUTOMATIC MACHINES. SUCH MACHINES ARE WITHIN THE SCOPE OF FEASIBILITY OF MODERN MEASUREMENT ENGINEERING. THERE IS NO DOUBT THAT THE DEVELOPMENT OF SCIENTIFICALLY FOUNDED ASSIGNMENT PROGRAMS FOR SUCH AUTOMATIC MACHINES, WITH ACCOUNT TAKEN OF ECONOMIC EXPEDIENCY, REQUIRES MUCH RESEARCH WORK NOT ONLY IN THE FIELD OF TEST METROLOGY, BUT ALSO IN THE FIELD OF THE TEST EQUIPMENT USED.

UNCLASSIFIED

USSR

UDC: 621.373.353(088.8)

YEGOROV, V. A., LOMAYEV, Yu. I.

"A Modulometer"

USSR Author's Certificate No 266067, filed 18 Dec 67, published 1 Jul 70 (from RZh-Radiotekhnika, No 2, Feb 71, abstract No 2A401 P)

Translation: This Author's Certificate introduces a modulometer which contains a precision voltage divider and a commutator which alternately switches in the complete and divided signals. To reduce modulometer error due to limited resolution of the tube, the gain of the amplifier following the commutator is increased to a value determined by the required precision of the oscilloscopic indicator. To prevent overloading of the device which leads to additional error, a tracking bilateral amplitude clipper is connected in the amplifier circuit between the commutator and the oscilloscopic indicator. E. L.

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Acc. Nr.: AP0031635 Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 1, pp 16-19

REFLEX AFIBRINOGENEMIA

Kh. D. Lomazova

Research Institute of Age-Specific Physiology and Physical Culture of the Academy of Pedagogic Sciences of the USSR, Moscow

Heparin perfusion of a hemodynamically isolated but with retained innervation carotid sinus of the rabbit leads to delayed blood coagulation, drastic fall of fibrinogen and rising level of the blood heparin. The reflex nature of these changes is demonstrated. Data derived from the analysis of reflex hypofibrinogenemia and afibrinogenemia are presented which prove that at the core of the described phenomena there lies modification of the fibrinogen properties caused by endogenous heparin.

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REEL/FRAME

19691762

USSR UDC 669.14.018.2

TARANTOVA, A. S., PEVZNER, L. M., LOMBERG, B. S., SOLOV'YEVA, G. G., and ZASLAVSKAYA, L. V.

"Martensite-Aged Steels with High Durability and Plasticity"

Moscow, Metallobeveniye i Termicheskaya Obrabotka Metallov, No 8, 1970, pp 70-74

Abstract: The purpose of the research described by this paper was to obtain martensite-aged steels based on the Fe-Ni-Co-Mo system with a durability of 240-280 kg/mm^2, and to study their structure, phase state, and mechanical characteristics. Alloys with 12-15% Ni, 13-17% Co, and 5-11% Mo with C 0.03% were checked. A more detailed study of these alloys was made on two levles of durability values. The chemical compositions and durabilities of the two are given in a table along with a third, the so-called Vascomax-350, for the sake of comparison.

The first two alloys have no added titanium or aluminum, as opposed to ordinary martensite-aged alloys, to avoid the formation of embrittling carbonitrides; the third contains 1.6-2% titanium. To obtain high durability with maximum plasticity, the steels had to be made with pure furnace charges. Vacuum induction melting

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